

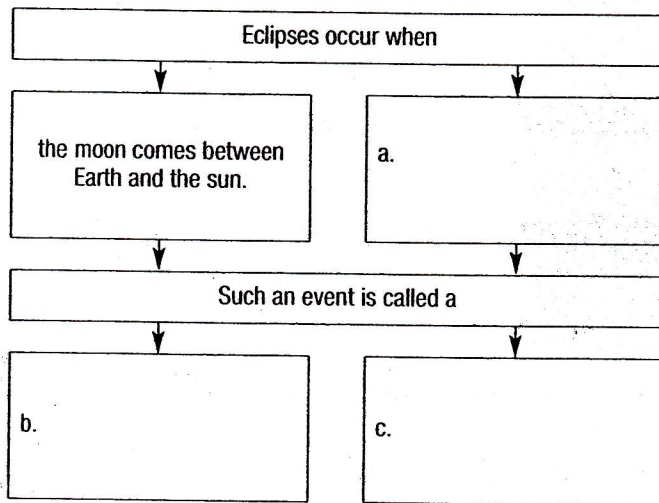
## Chapter 22 Origin of Modern Astronomy

### Section 22.2 The Earth-Moon-Sun System

*This section describes how Earth moves in space and how changes in the relative positions of Earth, the sun, and the moon cause seasons, phases of the moon, and eclipses.*

#### Reading Strategy

As you read, complete the flowchart to show how eclipses occur. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.



#### Motions of Earth

- Circle the letter of the two main motions of Earth.
  - rotation and precession
  - rotation and revolution
  - revolution and precession
  - rotation and aphelion
- Is the following sentence true or false? Day and night are caused by Earth's revolution on its axis. \_\_\_\_\_
- The point at which Earth is closest to the sun is called \_\_\_\_\_. \_\_\_\_\_
- Is the following sentence true or false? Seasons are caused in part by the tilt of Earth's axis of rotation. \_\_\_\_\_
- What is precession? \_\_\_\_\_

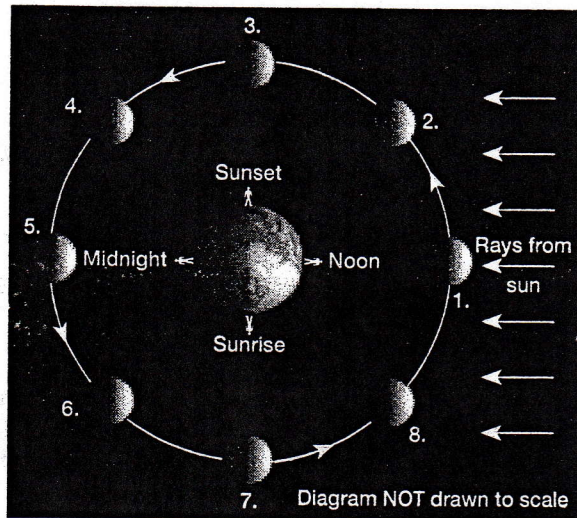
#### Motions of the Earth-Moon System

- Circle the letter of the term that describes the point at which the moon is farthest from Earth.
  - apogee
  - aphelion
  - perigee
  - perihelion

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7. Identify each labeled phase on the figure as one of the following: waning gibbous, first quarter, waning crescent, waxing gibbous, new, waxing crescent, full, third quarter.

1. \_\_\_\_\_ 4. \_\_\_\_\_ 7. \_\_\_\_\_  
 2. \_\_\_\_\_ 5. \_\_\_\_\_ 8. \_\_\_\_\_  
 3. \_\_\_\_\_ 6. \_\_\_\_\_



8. ☾ Lunar phases are caused by changes in how much of the sunlit side of the \_\_\_\_\_ faces Earth.
9. Do the phases of the moon affect how much of the moon is illuminated? Explain your answer. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
10. Is the following sentence true or false? The cycle of the phases takes about two days longer than the moon's revolution around Earth. \_\_\_\_\_
11. List two reasons why the moon's surface has extremely high and low temperatures. \_\_\_\_\_  
 \_\_\_\_\_

### Eclipses

12. A(n) \_\_\_\_\_ eclipse occurs when the moon passes between Earth and the sun and casts a shadow on Earth.
13. Is the following sentence true or false? A lunar eclipse occurs when the moon passes into Earth's shadow. \_\_\_\_\_
14. ☾ What must happen in order for an eclipse to take place? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
15. Who can see a total eclipse of the moon when it occurs? \_\_\_\_\_  
 \_\_\_\_\_